

PSYCHOSOCIAL PREDICTORS OF QUALITY OF LIFE AMONG ISCHEMIC STROKE PATIENTS IN SOUTHWESTERN NIGERIA

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ABSTRACT

Ischemic stroke ranks among the foremost causes of disability-related morbidity globally, carrying substantial psychosocial burden. Although biomedical aspects of stroke recovery have received considerable research attention, the psychosocial factors that shape health-related quality of life (HRQoL) among stroke survivors remain insufficiently examined, especially within sub-Saharan African populations. This study assessed the extent to which perceived social support, anxiety, and depression predict quality of life (QoL) among ischemic stroke patients managed in Federal Medical Centres in Southwestern Nigeria. An ex post facto descriptive survey design was utilised. One hundred and fifty-seven (157) ischemic stroke patients were recruited from Federal Medical Centres in Abeokuta, Ogun State and Ido Ekiti, Ekiti State via a multistage sampling procedure. Instruments administered included the Multidimensional Scale of Perceived Social Support (MSPSS), the Hospital Anxiety and Depression Scale (HADS), and the EuroQol-5D-5L. Data analysis employed independent samples t-tests and multiple regression analysis at $p < 0.05$. Patients reporting high perceived social support demonstrated significantly superior QoL relative to those with low perceived social support ($T(155) = -3.207, p < .05$). Similarly, patients with low anxiety levels exhibited significantly better QoL compared to those with elevated anxiety ($T(155) = -2.114, p < .05$). Together, perceived social support, anxiety, and depression explained 23.9% of the variance in QoL ($R = .504; F(3,153) = 17.364; p < .05$), with depression identified as the dominant independent predictor. Psychosocial variables particularly depression, anxiety, and perceived social support are robust predictors of QoL among ischemic stroke patients in Nigeria. Incorporating routine psychosocial screening and targeted psychological intervention into stroke rehabilitation is strongly recommended.

Keywords: depression, anxiety, perceived social support, intervention

INTRODUCTION

Quality of life (QoL) represents a multidimensional construct that integrates physical, psychological, social, and environmental dimensions of human functioning. In clinical contexts, QoL has assumed increasing prominence as an outcome measure that extends beyond biomedical indicators to capture the subjective lived experience of patients and their caregivers. According to the World Health Organization (1998), QoL reflects an individual's appraisal of their life circumstances in relation to prevailing cultural values, personal aspirations, and environmental conditions. Socially, Aruna & Tinuola (2025) in a study among rural women opined that access to social services such as clean potable water and quality health are some of the pointers to a good quality of life and cumulative health.

Stroke is characterised clinically as a sudden-onset focal neurological deficit of vascular aetiology persisting beyond 24 hours, and it constitutes one of the leading causes of mortality and long-term disability worldwide (Benjamin et al., 2018; Feigin et al., 2015; GBD 2021 Stroke Risk Factor Collaborators, 2024). Ischemic stroke, resulting from thrombotic or embolic occlusion of cerebral vasculature, accounts for roughly 87% of all stroke events and is a primary driver of sustained disability, neurocognitive decline, and impaired quality of life (GBD 2021 Stroke Risk Factor Collaborators, 2024). Within the Nigerian context, stroke prevalence is estimated at approximately 1.14 per 1,000 persons, with case fatality rising markedly within 30 days of onset (Adeloye, 2014; Bello et al., 2021).

Despite the well-documented physical consequences of ischemic stroke, its psychosocial sequelae have received comparatively limited investigation, particularly in low- and middle-income countries (LMICs) such as Nigeria.

Psychosocial adversities following stroke including clinically significant depression, anxiety disorders, and erosion of perceived social support are widely prevalent and can substantially compromise rehabilitation engagement and long-term QoL outcomes (Ojo et al., 2026; Yi et al., 2022). Furthermore, pre-existing personality traits may independently shape post-stroke QoL, though this dimension remains understudied in African populations (Ojo et al., 2026).

Post-stroke depression is the most prevalent neuropsychiatric complication of ischemic stroke, with pooled estimates placing its occurrence between 25% and 33% of survivors (Ayerbe et al., 2013; Hackett & Pickles, 2014; Yi et al., 2022). Depression following stroke confers a substantially worse prognosis, is associated with elevated mortality, reduces independence in daily activities, and impedes adherence to prescribed treatment regimens (Yi et al., 2022). Post-stroke anxiety, affecting approximately 20-25% of survivors, is independently linked to diminished functional capacity and poorer QoL outcomes (Campbell Burton et al., 2013; Ojagbemi et al., 2020). Perceived social support conceptualised as an individual's subjective appraisal that meaningful relational bonds exist which can furnish tangible and emotional assistance has been consistently associated with attenuating the adverse psychological effects of stroke and facilitating functional recovery (Bello et al., 2021; Kruithof et al., 2013).

Notwithstanding an expanding body of international literature on psychosocial determinants of post-stroke QoL (Jaracz & Kozubski, 2003; Naess et al., 2006; Raju et al., 2010; Teoh et al., 2009), research from Nigerian and sub-Saharan African settings remains markedly scarce. Direct transposition of findings from high-income Western settings is methodologically problematic given the substantial disparities in socioeconomic conditions, cultural norms, healthcare infrastructure,

and the nature of informal support systems in sub-Saharan Africa (Owolabi et al., 2021). This study examined the independent and collective contributions of perceived social support, anxiety, and depression to QoL among ischemic stroke patients receiving care in Southwestern Nigeria.

Research Objectives

The specific objectives of this study were to:

1. Determine whether perceived social support significantly influences quality of life among ischemic stroke patients.
2. Examine whether anxiety significantly influences quality of life among ischemic stroke patients.
3. Investigate the independent and joint influence of perceived social support, anxiety, and depression on quality of life among ischemic stroke patients.

Research Hypotheses

1. Ischemic stroke patients with high perceived social support will report significantly higher quality of life than those with low perceived social support.
2. Ischemic stroke patients with low anxiety will report significantly higher quality of life than those with high anxiety.
3. There will be a significant independent and joint influence of perceived social support, anxiety, and depression on quality of life among ischemic stroke patients.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Depression and Quality of Life

Converging evidence consistently establishes a negative relationship between post-stroke depression and health-related quality of life. Yi et al. (2022), in a

systematic review, confirmed that depression is a potent independent predictor of poor QoL across multiple domains in stroke survivors. Zikić et al. (2014) similarly found that post-stroke depression was associated with lower functional and QoL scores. Okeke et al. (2022), drawing on Nigerian data, demonstrated that both new-onset and persistent post-stroke depression were associated with markedly diminished QoL, underscoring the chronic burden of this complication. Bello et al. (2021), in a systematic review and meta-analysis of African stroke survivors, identified depression as the principal psychosocial determinant of QoL in ischemic stroke survivors across Africa.

Earlier Nigerian work identified neurological and socioeconomic factors as key determinants of post-stroke QoL (Owolabi, 2008). Within the Nigerian context, Oni et al. (2018) found that depression exerted a significant independent negative effect on QoL across multiple dimensions in stroke survivors attending a tertiary hospital. Aliyu et al. (2018) similarly reported that depression, disability, and socioeconomic factors were significant independent determinants of health-related QoL among stroke survivors in Northwest Nigeria. Complementarily, Ojo et al. (2026), using the same Nigerian clinical sample and EuroQol-5D-5L instrument employed in this study, demonstrated that Big Five personality traits particularly extroversion, neuroticism, and openness to experience collectively accounted for approximately 50% of the variance in QoL, underscoring that both psychosocial states and dispositional personality characteristics are clinically significant determinants of post-stroke QoL in Nigeria.

Ojagbemi et al. (2017) argued on the basis of a systematic review of sub-Saharan African studies that integrated psychosocial and psychiatric services should be embedded within stroke rehabilitation protocols in the region.

Anxiety and Quality of Life

Post-stroke anxiety, though prevalent, has attracted considerably less research attention than depression. Oni et al. (2017) established that anxiety independently predicted poorer QoL across functional, social, and psychological domains in stroke patients in Nigeria, with effects persisting after controlling for demographic variables. Tang et al. (2013) and Morris et al. (2013) further demonstrated that anxiety was consistently associated with reduced QoL scores across diverse stroke populations. Stein et al. (2018) reported that patients with comorbid anxiety and depression following ischemic stroke demonstrated substantially lower QoL scores and significantly reduced rates of independence in activities of daily living relative to those without these comorbidities. Using pooled data from multiple African cohorts,

Ojagbemi et al. (2020) confirmed a significant inverse relationship between post-stroke anxiety severity and QoL scores, an association that remained robust after adjusting for relevant confounders. Fong et al. (2022), in a three-wave structural equation modelling study, demonstrated that social support, hope, and anxiety jointly accounted for a substantial proportion of variance in health-related QoL, with anxiety emerging as an important mediating pathway.

Perceived Social Support and Quality of Life

A robust body of evidence links perceived social support to favourable QoL outcomes following stroke. Bello et al. (2021) concluded that social support is a critical determinant of QoL across African stroke populations, noting that

strengthening family-based support networks yields measurable improvements in post-stroke recovery. Fong et al. (2022), in a longitudinal investigation, demonstrated that psychosocial variables including perceived social support and hope collectively explained substantial variance in QoL over three assessment waves, indicating a dominant role for relational resources relative to purely biomedical predictors. Within the Nigerian context, Adigwe (2021) demonstrated that social support, alongside disability level and emotional well-being, significantly influenced QoL in stroke patients in Nigeria, highlighting the relevance of relational resources in African healthcare settings.

Theoretical Framework

Cognitive Theory of Depression

Cognitive theoretical frameworks conceptualise depression as arising from systematic distortions in information processing. Beck's cognitive model proposes that maladaptive automatic thoughts and dysfunctional core schemas generate depressive affect across emotional, motivational, somatic, and behavioural domains (Abramson et al., 2002; Beck & Bredemeier, 2016). Complementarily, Seligman's reformulated learned helplessness model posits that depression emerges when individuals attribute adverse outcomes to internal, stable, and global causes, engendering pervasive hopelessness (Yi et al., 2022). Both perspectives hold particular relevance for stroke survivors, who frequently harbour distorted appraisals of their physical and cognitive capabilities, thereby sustaining and amplifying depressive cognitions (Yi et al., 2022).

Adler's Theory of Anxiety

Adler (1927) proposed that anxiety is fundamentally rooted in pervasive feelings of inferiority and is sustained by the individual's striving to compensate for perceived inadequacies. Applied to post-stroke disability, the marked functional losses and disruption of established social roles that stroke survivors commonly experience generate profound inferiority-related distress, which may manifest clinically as anxiety (Ojagbemi et al., 2020). Caregiving environments characterised by overprotection or emotional neglect can further consolidate anxiety responses by reinforcing survivors' perceptions of vulnerability and reduced self-efficacy.

Relational Regulation Theory (RRT) of Social Support

Relational Regulation Theory (RRT), advanced by Lakey and Orehek (2011), offers a compelling explanation for the direct influence of perceived social support on psychological well-being. RRT asserts that support relationships promote mental health not primarily through deliberate coping assistance but through the routine, affectively meaningful exchanges and shared activities that regulate emotion, cognition, and behaviour. Empirical investigations of RRT have indicated that relational factors account for a substantial proportion of variance in perceived support ratings, underscoring the primacy of relational processes in psychosocial adjustment following acute illness such as stroke (Lakey & Orehek, 2011).

Integrative Model of Quality of Life

Ferrans (1990, 1996) proposed an integrative understanding of QoL that organises the construct across four core domains: health and functioning, socioeconomic, psychological and spiritual well-being, and family. This integrative framework highlights the inherent complexity of QoL as a subjective experience, recognising that physical, psychological, and social variables interact dynamically to shape overall well-being (Ferrans & Powers, 1992; Ferrans et al., 2005). The model is

particularly applicable to stroke populations, given the pervasive multi-domain consequences that stroke imposes on survivors (Bello et al., 2021).

METHODS

Research Design

This study adopted a descriptive survey research design of ex post facto type. The independent variables were perceived social support, anxiety, and depression. The dependent variable was quality of life among ischemic stroke patients. The ex post facto design was selected because the independent variables had already occurred prior to the commencement of the study and could not be experimentally manipulated.

Participants

The study population comprised ischemic stroke patients receiving treatment at Federal Medical Centre (FMC), Abeokuta, Ogun State and FMC, Ido Ekiti, Ekiti State. A multistage sampling procedure was employed: simple random sampling was used to select the two Federal Medical Centres, and purposive sampling was then used to select 80 participants from each of the centre. A total of 157 questionnaires were retrieved and analysed. The sample comprised 92 Christians (58.6%) and 62 Muslims (41.4%). By age, 39 (24.8%) were aged 50-59 years, 52 (33.2%) were aged 60-69, and 66 (42.1%) were aged 70 and above. Regarding marital status, 144 (91.7%) were married and 13 (8.3%) were single. Educational qualification ranged from primary to postgraduate level.

Inclusion and Exclusion Criteria

Participants were included if they: (i) met the WHO definition of stroke; (ii) had a confirmed diagnosis of ischemic stroke per medical records; (iii) were receiving treatment at the study sites; and (iv) had no cognitive impairment. Participants were excluded if they were unable to communicate reliably, had experienced a stroke for less than one month, or had comorbid medical conditions likely to independently affect QoL.

Instruments

Multidimensional Scale of Perceived Social Support (MSPSS)

Perceived social support was measured using the MSPSS, developed by Zimet et al. (1988, 1990). It is a 12-item, 7-point Likert-type scale assessing three sources of support: family, friends, and significant others. Cronbach's alpha coefficients ranged from .81 to .90 (Family subscale), .90 to .94 (Friends subscale), .83 to .98 (Significant Other subscale), and .84 to .92 for the total scale.

Hospital Anxiety and Depression Scale (HADS)

Anxiety and depression were assessed using the HADS, developed by Zigmond and Snaith (1983). The scale comprises 14 items: 7 measuring anxiety and 7 measuring depression. Internal consistency, assessed by Spearman correlations, yielded $r = +0.76$ to $+0.41$ ($p < .01$) for anxiety and $r = +0.60$ to $+0.30$ ($p < .02$) for depression. Validity coefficients were $r = +0.74$ (anxiety) and $r = +0.70$ (depression), both significant at $p < .001$.

EuroQol-5D-5L

Quality of life was measured using the EuroQol-5D-5L, introduced in 2009. This instrument assesses five dimensions of QoL: mobility, self-care, usual activities,

pain/discomfort, and anxiety/depression. Each dimension is rated on a 5-level severity scale. Pinto et al. (2011) validated this instrument on a stroke population, reporting significant correlations with stroke severity (NIHSS, $r = -0.404$, $p < .001$) and degree of impairment (Modified Barthel Index, $r = 0.512$, $p < .001$).

Procedure

Ethical approval was obtained from the Institutional Review Boards of FMC Abeokuta and FMC Ido Ekiti. Informed consent was obtained from each participant prior to data collection. Participants were guided through the questionnaire completion process by trained research assistants. A total of 160 questionnaires were administered, and 157 were retrieved and considered valid for analysis.

Data Analysis

Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarise demographic data. Hypotheses 1 and 2 were tested using independent samples t-tests, comparing QoL between high and low groups for perceived social support and anxiety respectively. Hypothesis 3 was tested using multiple regression analysis. All analyses were conducted at the .05 level of significance.

RESULTS

The sample comprised 92 Christians (58.6%) and 62 Muslims (41.4%). By age, 39 (24.8%) were aged 50-59 years, 52 (33.2%) were aged 60-69, and 66 (42.1%) were aged 70 and above. Regarding marital status, 144 (91.7%) were married and 13 (8.3%) were single. Educational qualification ranged from primary to postgraduate level.

Hypothesis 1: Perceived Social Support and Quality of Life

H1 predicted that ischemic stroke patients with high perceived social support would report significantly higher quality of life than those with low perceived social support. An independent samples t-test was conducted to test this hypothesis.

Table 1. T-test Results: Perceived Social Support and Quality of Life

Variable	Group	N	Mean	SD	df	t	p
Quality of Life	Low PSS	104	14.13	2.22	155	-3.207	.002
	High PSS	43	16.42	6.61			

As shown in Table 1, there was a statistically significant difference in quality of life between participants with high and low perceived social support $t(155) = -3.207$, $p < .05$). Participants with high perceived social support had a significantly higher mean QoL score ($M = 16.42$) compared to those with low perceived social support ($M = 14.13$), with a mean difference of 2.29. Hypothesis 1 was confirmed.

Hypothesis 2: Anxiety and Quality of Life

H2 predicted that ischemic stroke patients with low anxiety would report significantly higher quality of life than those with high anxiety.

Table 2. T-test Results: Anxiety and Quality of Life

Variable	Group	N	Mean	SD	df	t	p
Quality of Life	High Anxiety	78	14.17	2.81	155	-2.114	.036
	Low	79	15.62	5.39			

Anxiety

Table 2 shows a statistically significant difference in quality of life between participants with high and low anxiety ($t(155) = -2.114, p < .05$). Participants with low anxiety had a higher mean QoL score ($M = 15.62$) compared to those with high anxiety ($M = 14.17$), with a mean difference of 1.45. Hypothesis 2 was confirmed.

Hypothesis 3: Joint Influence of Perceived Social Support, Anxiety, and Depression

H3 predicted that there would be a significant independent and joint influence of perceived social support, anxiety, and depression on quality of life among ischemic stroke patients. Multiple regression analysis was employed.

Table 3. Multiple Regression: Perceived Social Support, Anxiety, and Depression on Quality of Life

Predictor	β	t	p	R	R^2	F	P (model)
Perceived Social Support	-.168	-2.300	.023	.504	.239	17.364	.000
Anxiety	.376	4.425	.000				
Depression	-.549	-6.505	.000				

As presented in Table 3, the joint combination of perceived social support, anxiety, and depression yielded a significant multiple correlation ($R = .504$; $F(3,153) = 17.364$; $p < .05$), accounting for 23.9% of the variance in quality of life ($\text{Adj. } R^2 = .239$). Depression was the strongest independent predictor ($\beta = -.549, p < .05$), followed by anxiety ($\beta = .376, p < .05$) and perceived social support ($\beta = -.168, p$

< .05). All three variables independently and significantly predicted quality of life. Hypothesis 3 was confirmed.

DISCUSSION

The present study examined the contributions of perceived social support, anxiety, and depression as psychosocial predictors of QoL in a sample of ischemic stroke patients attending tertiary hospitals in Southwestern Nigeria. All three research hypotheses were supported, confirming that each of these psychosocial variables independently and jointly predicts post-stroke QoL in this population.

The association between elevated perceived social support and superior QoL observed in this study is consistent with the broader international literature on psychosocial predictors of stroke outcomes. Bello et al. (2021) identified social support as a critical determinant of QoL across African stroke populations, noting that deliberately strengthening family-based support networks yields measurable improvements in post-stroke recovery. Similarly, Fong et al. (2022) demonstrated in a longitudinal investigation that psychosocial factors, with social support as a central component, accounted for substantial variance in QoL through direct and mediated pathways, suggesting that relational resources may be as influential as clinical indicators in shaping long-term outcomes. These findings align with the theoretical predictions of Relational Regulation Theory (Lakey & Orehek, 2011), which attributes the psychological benefits of social support to the routine regulatory functions of meaningful interpersonal interaction.

Support for Hypothesis 2, demonstrating an inverse relationship between anxiety and QoL, resonates with findings reported across multiple international research contexts. Ojagbemi et al. (2020) established that anxiety independently predicted diminished QoL in stroke patients in Nigeria, even after accounting for sociodemographic and stroke-related variables. Stein et al. (2018) similarly reported that comorbid anxiety was associated with lower QoL scores and reduced functional independence among stroke survivors. These collective findings, together with the recommendations of Fong et al. (2022) for targeted post-stroke anxiety treatment, support the imperative of incorporating anxiety-focused psychological interventions into standard stroke care pathways.

The regression model demonstrated that the psychosocial predictors collectively accounted for approximately 24% of the variance in QoL. This compares with the substantially higher explained variance (approximately 50%) reported by Ojo et al. (2026) when personality traits were modelled as predictors in an identical sample and setting, suggesting that dispositional personality characteristics may exert stronger effects on QoL than acute psychosocial states, or that psychosocial and personality predictors jointly explain a broader proportion of variance when considered together. Although statistically significant, this proportion suggests that a considerable share of QoL variance is attributable to factors beyond the scope of the current investigation, potentially including stroke severity, degree of functional impairment, cognitive deficit, socioeconomic status, and comorbid health conditions. Depression emerged as the dominant independent predictor, a finding consistent with the conclusions of Bello et al. (2021), Yi et al. (2022), and Oni et al. (2018), each of whom identified depression as the primary psychosocial determinant of QoL in stroke populations across diverse settings.

The positive beta coefficient associated with anxiety ($\beta = .376$) warrants interpretive caution and may reflect the bidirectional nature of the anxiety-QoL relationship, potential item overlap between the HADS anxiety subscale and certain EuroQol-5D-5L dimensions, or the possibility that a degree of anxiety-related arousal may enhance motivation and engagement in rehabilitation activities. Future research employing longitudinal designs and latent variable modelling would be better positioned to disentangle these overlapping pathways and to account for temporal variation in anxiety and QoL over the course of recovery.

These findings have direct implications for clinical practice and health policy in Nigeria and analogous LMIC environments. Stroke rehabilitation in Nigeria has historically prioritised physiological and motor recovery, often without systematic incorporation of psychosocial assessment or intervention. The present findings demonstrate that psychological well-being and social support are independently and jointly associated with QoL, indicating that their neglect in rehabilitation programmes constitutes a significant missed opportunity. Accordingly, routine psychosocial screening and referral pathways for psychological intervention should be embedded within comprehensive stroke care models. Furthermore, the extended family and community structures that characterise Nigerian social organisation should be deliberately engaged and resourced as partners in the rehabilitation process, leveraging an existing cultural asset that may yield meaningful gains in perceived social support and, consequently, in QoL.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. **Create referral pathways to mental health professionals.** Clinical psychologists and psychiatrists should be part of stroke rehabilitation teams at Federal Medical Centres and other tertiary hospitals. Patients who screen positive for depression or anxiety should be referred promptly.
2. **Strengthen social support.** Patients with high perceived social support had higher QoL ($M = 16.42$ vs 14.13). Clinicians should involve family members in care planning, and hospitals could set up peer support groups for stroke survivors.
3. **Train and support caregivers.** Caregivers should receive education on stroke recovery and on the emotional needs of survivors. Community and faith-based groups, which are strong sources of support in Nigeria, can be enlisted as partners in rehabilitation.
4. **Do further research.** Future studies should use longitudinal designs, larger and more diverse samples, and additional predictors such as stroke severity, functional impairment, and socioeconomic status. Since the psychosocial variables explained only 23.9% of QoL variance, these other factors clearly matter. Studies should also clarify why anxiety had a positive beta coefficient.

CONCLUSION

The present study provides empirical evidence that perceived social support, anxiety, and depression are each significant independent predictors of QoL among ischemic stroke patients in Southwestern Nigeria, with depression demonstrating the strongest predictive effect. These results underscore the urgent need to move beyond exclusively biomedical approaches and to mainstream psychosocial assessment and intervention within stroke rehabilitation frameworks in Nigeria and comparable LMIC settings. Clinicians, rehabilitation specialists, and health policymakers should accord the psychological well-being of stroke survivors the

same priority as physical recovery, recognising its central role in determining long-term QoL and the broader trajectory of poststroke adaptation.

Limitations

This study was limited to Federal Medical Centres in two states in Southwestern Nigeria, which may constrain generalisability. The cross-sectional design precludes causal inference. The sample size, while adequate for the analyses conducted, remains relatively modest. Future research should employ longitudinal designs, larger and more geographically diverse samples, and explore additional psychosocial and environmental predictors of QoL.

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